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CLAIMS

[Utility model registration claim]
[Claim 1] It is data display equipment which consists of a display unit, a display controller, and pointing equipment in the schedule-pipe ** system which controls operation of a facility device. It has the multi-window function which hierarchized the device schedule setting screen and the device operation information list screen according to device. The operation pattern code of each device is outputted to the operation pattern data display field for a fixed period established in the aforementioned device schedule setting screen. While reading the operation time data for a fixed period of the device chosen with the aforementioned pointing equipment from a database and displaying on the analog value display column according to each day on the aforementioned device operation information list screen by the bar graph Data display equipment which established the picture output means which carries out highlighting of the field in the aforementioned device schedule setting screen relevant to the selected device according to a color or a pattern.
[Claim 2] The data-display equipment according to claim 1 which established the picture output means which carries out highlighting of the applicable field of the present day on the aforementioned device operation information list screen according to a color or a pattern while read from a database the operation time data of the device which chose from the aforementioned device schedule setting screen with the aforementioned pointing equipment for a fixed period from the present day and having displayed by the bar graph on the analog value display column according to each day on the aforementioned device operation information list screen.
[Claim 3] The data-display equipment according to claim 1 or 2 which prepared the digital-readout column in the above-mentioned device operation information list screen, and established the picture output means which carries out highlighting of the field in the aforementioned device operation information list screen relevant to an applicable day according to a color or a pattern while carrying out the digital readout of the operation time data of the day applicable to the date of the analog value display column specified with the aforementioned pointing equipment to the aforementioned digital-readout column.
[Claim 4] The above-mentioned device operation information list screen is interrupted, the schedule-number value display column is prepared, and it is the aforementioned pointing equipment. The data-display equipment according to claim 3 prepared a picture output means indicate the interruption operation schedule set as the selected device by multiplex by the bar graph with the operation time data based on the aforementioned operation pattern code at the aforementioned analog value display column, and carry out a digital readout to the aforementioned interruption schedule-number value display column in the interruption operation schedule data applicable to the date of the analog value display column specified with the aforementioned pointing equipment.

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DETAILED DESCRIPTION

[Detailed explanation of a design]
[0001]
[Industrial Application]
This design is especially related with data display equipments, such as an operation schedule, about the data display equipment in a schedule-pipe ** system.
[0002]
[Description of the Prior Art]
Conventionally, the managerial system which carries out the centralized control of the institutions, such as a building and a plant, is constituted so that the operation schedule of the facility device which is a controlled system, and the collected performance datas may be displayed on display, such as CRT, and can be supervised. The operation schedule list of facility devices, the detail of the operation schedule for every facility device, etc. are stored in the database as another file, respectively, and can be displayed on display by operating input units, such as a mouse and a keyboard.
[0003]
[Problem(s) to be Solved by the Device]
When displaying data, such as an operation schedule, conventionally, file designation operation is performed and it is made to display on display. The display of a list must be ended, a detailed schedule screen must newly be called from a database and operation is complicated to follow, for example, display the operation schedule list of facility devices, and know the detail of the schedule of ****** under list.
[0004]
Moreover, the detailed schedule generally described with programming language has the problem of being hard to grasp a setup of time etc. quickly.
Then, this design offers the man machine interface which displays an operation schedule with the display gestalt which suits human being's feeling more by easy operation, and it aims at improving the operability and the visibility of data display equipment.
[0005]
[Means for Solving the Problem]
In the schedule-pipe ** system which proposes this design in order to attain the above-mentioned purpose, and controls operation of a facility device It is data display equipment which consists of a display unit, a display controller, and pointing equipment. It has the multi-window function which hierarchized the device schedule setting screen and the device operation information list screen according to device. The operation pattern code of each device is outputted to the operation pattern data display field for a fixed period established in the aforementioned device schedule setting screen. While reading the operation time data for a fixed period of the device chosen with the aforementioned pointing equipment from a database and displaying on the analog value display column according to each day on the aforementioned device operation information list screen by the bar graph The data display equipment which established the picture output means which carries out highlighting of the field in the

aforementioned device schedule setting screen relevant to the selected device according to a color or a pattern is proposed.
[0006]
Moreover, the operation time data for a fixed period from the present day of the device chosen from the aforementioned device schedule setting screen with the aforementioned pointing equipment are read from a database. While displaying on the analog value display column according to each day on the aforementioned device operation information list screen by the bar graph, the data display equipment which established the picture output means which carries out highlighting of the applicable field of the present day on the aforementioned device operation information list screen according to a color or a pattern is proposed.
[0007]
Moreover, the digital-readout column prepares in the aforementioned device operation information list screen, and while carrying out the digital readout of the operation time data of the day applicable to the date of the analog value display column specified with the aforementioned pointing equipment to the aforementioned digital-readout column, the data-display equipment which established the picture output means which carries out highlighting of the field in the aforementioned device operation information list screen relevant to an applicable day according to a color or a pattern proposes.
[0008]
Moreover, interrupt the aforementioned device operation information list screen, and the schedule-number value display column is prepared. The interruption operation schedule set as the device chosen with the aforementioned pointing equipment It indicates by multiplex by the bar graph with the operation time data based on the aforementioned operation pattern code at the aforementioned analog value display column. The data display equipment which established the picture output means which carries out the digital readout of the interruption operation schedule data applicable to the date of the analog value display column specified with the aforementioned pointing equipment to the aforementioned interruption schedule-number value display column is proposed.
[0009]
[Function]
A design according to claim 1 is displayed on a device schedule setting screen by the individual, each facility device, for example, the operation schedule for 1 week, operation pattern data display field in operation pattern code. If the device which wants to know a detailed operation schedule is specified with pointing equipment, a device operation information list screen will be established, and the operation schedule for 1 week of the device specified to be the analog value display column according to day is displayed by the bar graph, and can glance at it and grasp the content of an operation pattern code. Highlighting of the related field of the specification device in a device schedule setting screen is simultaneously carried out by the different color or different pattern from the circumference.
[0010]
If a design according to claim 2 specifies the device which wants to know a detailed operation schedule with pointing equipment, the operation schedule for a fixed period, 1 [for example,], week will be displayed on the analog value display column of a device operation information list screen by the bar graph from that day, and highlighting of the field relevant to that day, for example, date column etc., of a device operation information list screen etc. will be carried out by the color or the pattern.
[0011]
The digital readout of the operation time data of the specified day is carried out to the digital-readout column, and a design according to claim 3 can recognize exact setting time, if the field of arbitrary days is specified with pointing equipment in the analog value display column according to day of a device operation information list screen. Simultaneously, highlighting of the related field of the day specified with the pointing equipment in a device operation information list screen is carried out by the different color or different pattern from the circumference.
[0012]
When the device displayed on the device operation information list screen is interrupted and the

operation schedule is set up, a design according to claim 4 interrupts the analog value display column with the operation time data based on the aforementioned operation pattern code, and indicates the operation schedule by multiplex. And if the field of arbitrary days is specified with pointing equipment in the analog value display column, the digital readout of the interruption operation schedule of the specified day will be carried out to the interruption schedule-number value display column.
[0013]
[Example]
Hereafter, one example of this design is explained according to drawing. Drawing 1 shows the composition of the data display equipment 1 of the centralized control system of a building, and is constituted by the mouse 4 as a display 2, a display controller 3, and pointing equipment, and the cursor 5 interlocked with a mouse 4 is displayed on the screen of a display 2.
[0014]
A display controller 3 carries out parallel processing of the picture output program read from external storage (not shown), and has the multi-window function which controls two or more virtual display terminals, and is simultaneously displayed on a display.
As a picture output program of a schedule data, the device schedule setting screen 6 which is shown in drawing 2 and which is an equipment list, and the device operation information list screen 7 which displays the individual detailed schedule shown in drawing 3 are set up.
[0015]
The cursor 5 interlocked with a mouse 4 and a mouse 4 is operated, and it is a menu (not shown). Selection of a shell device schedule setting screen displays the device schedule setting screen 6 shown in a display 2 at drawing 2 . The name of various devices is displayed on the schedule operation equipment-list viewing area 8 of the device schedule setting screen 6, and the operation pattern code of HE1 and HE2 grade which consists of three characters is displayed on the operation pattern data display field 9 by one week, respectively. It is displayed on the operation situation display field 10 contiguous to the operation pattern data display field 9 whether it is on stream and whether according to the set-up schedule, it is [be / it] under halt.
[0016]
If the pick of the arbitrary things in the information-requirements button 12 of the detailed information demand input area 11 currently displayed on the right-hand side of the schedule operation equipment-list viewing area 8 is carried out with cursor 5 to know the operation schedule of the specific device in the schedule operation equipment-list viewing area 8, the device operation information list screen 7 will be established. When cursor 5 is moved to the information-requirements button 12 of the train of No.7 in an equipment list and mouse button 4a is clicked, for example, by the picture output means As shown in drawing 3 , it is a part (here, from Monday on February 16 on February 10) for 1 week from that day. While the operation information on the air-conditioning machine of No.7 by Sunday is read from a database, is changed into graph data and displayed on the device operation information list screen 7 as a bar graph, a coloring indication of the line to which it corresponds in the device schedule setting screen 6 is given at a different color from other lines.
[0017]
The device operation information list screen 7 is constituted so that the operating-time band for 1 week may be displayed, and the date display column 12, the operation pattern display column 13, and the analog value display column 14 are formed by 1 week, respectively. The time scales 15 and 15 for 24 hour and -- are displayed on the analog value display columns 14 and 14 and --, respectively, and along with the time scales 15 and 15 and --, bar graphs 16 and 16 and -- carry out the analog display of the operation pattern, and can glance at it and grasp an operation schedule. Moreover, highlighting of the frame of the date display column 12 of operation that day (February 10, Monday) is carried out, and the date and a day of the week on the day can be recognized on a screen. [0018]
Moreover, when only OFF is set up, as only ON shows the column on Friday in the said drawing, the arrow marks 17 and 18 are displayed on the part of setting time.
The numeric data of the day is displayed on the digital-readout column 19 of the lower berth with

control circuits a and b and the kind information on -- at the same time the color of the related field of the day to which cursor 5 points will change as shown in drawing 4 , if cursor 5 is moved to the arbitrary analog value display columns 14, in order to know the performance data of a specific day still in detail in the day displayed on the analog value display columns 14 and 14 and --.

[0019]

Moreover, when a temporary interruption schedule is set as the device concerned, as shown in the column on Thursday of the analog value display column 14, if cursor 5 is moved to the column on Thursday while a multiplex indication of the interruption schedule is given by the bar graph a little under the bar graph which shows fixed schedule operation, the interruption schedule-number value display column 20 under the digital-readout column 19 will be interrupted, and the digital readout of the schedule will be carried out.

[0020]

[Effect of the Device]

Since the analog display of the operation schedule of the device which the device operation information list screen was established and was specified by choosing the arbitrary devices in a device schedule setting screen with pointing equipment is carried out with the bar graph and sign corresponding to the time scale, a design according to claim 1 can glance at it and grasp the established state of a schedule. Moreover, since highlighting of the related field of the applicable device in a device schedule setting screen is carried out by a color or the pattern, the relation of the operation schedule displayed on the device operation information list screen and an applicable device glances, it understands, and visibility is good.

[0021]

Since the analog display of the operation schedule of a fixed period is carried out to a device operation information list screen from the present day of a device specified all over the device schedule setting screen and highlighting of the date column on the day etc. is carried out, the relation of the date and an operation schedule glances and a design according to claim 2 is understood.

Since the digital readout of the time data of ON/OFF of operation is carried out by directing with cursor the performance data by which the analog display was carried out to the device operation information list screen, a design according to claim 3 can know the detail of a schedule by very easy operation. Moreover, since highlighting of the related field of the applicable day in a device operation information list screen is carried out by a color or the pattern, the operation schedule displayed on the digital-readout column and the relation of an applicable day glance, and it understands, and visibility is good and the operability and the visibility of data display equipment improve remarkably.

[0022]

A multiplex indication of the design according to claim 4 is given with the interrupt and according [an operation schedule] to aforementioned operation pattern code to analog value display column operation time data by which it was set as the device displayed on the device operation information list screen. And if the field of arbitrary days is specified with pointing equipment in the analog value display column, the existing operation time data set as the specified day the digital readout of the operation schedule is carried out to the interruption schedule-number value display column by interrupting, and according to an operation pattern code and a temporary interruption operation schedule can be distinguished clearly, and fear of misconception will be canceled.

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TECHNICAL FIELD

[Industrial Application]
This design is especially related with data display equipments, such as an operation schedule, about the data display equipment in a schedule-pipe ** system.
[0002]

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PRIOR ART

[Description of the Prior Art]
Conventionally, the managerial system which carries out the centralized control of the institutions, such as a building and a plant, is constituted so that the operation schedule of the facility device which is a controlled system, and the collected performance datas may be displayed on display, such as CRT, and can be supervised. The operation schedule list of facility devices, the detail of the operation schedule for every facility device, etc. are stored in the database as another file, respectively, and can be displayed on display by operating input units, such as a mouse and a keyboard.
[0003]

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EFFECT OF THE INVENTION

[Effect of the Device]
Since the analog display of the operation schedule of the device which the device operation information list screen was established and was specified by choosing the arbitrary devices in a device schedule setting screen with pointing equipment is carried out with the bar graph and sign corresponding to the time scale, a design according to claim 1 can glance at it and grasp the established state of a schedule. Moreover, since highlighting of the related field of the applicable device in a device schedule setting screen is carried out by a color or the pattern, the relation of the operation schedule displayed on the device operation information list screen and an applicable device glances, it understands, and visibility is good.
[0021]
Since the analog display of the operation schedule of a fixed period is carried out to a device operation information list screen from the present day of a device specified all over the device schedule setting screen and highlighting of the date column on the day etc. is carried out, the relation of the date and an operation schedule glances and a design according to claim 2 is understood.
Since the digital readout of the time data of ON/OFF of operation is carried out by directing with cursor the performance data by which the analog display was carried out to the device operation information list screen, a design according to claim 3 can know the detail of a schedule by very easy operation. Moreover, since highlighting of the related field of the applicable day in a device operation information list screen is carried out by a color or the pattern, the operation schedule displayed on the digital-readout column and the relation of an applicable day glance, and it understands, and visibility is good and the operability and the visibility of data display equipment improve remarkably.
[0022]
A multiplex indication of the design according to claim 4 is given with the interrupt and according [an operation schedule] to aforementioned operation pattern code to analog value display column operation time data by which it was set as the device displayed on the device operation information list screen. And if the field of arbitrary days is specified with pointing equipment in the analog value display column, the existing operation time data set as the specified day the digital readout of the operation schedule is carried out to the interruption schedule-number value display column by interrupting, and according to an operation pattern code and a temporary interruption operation schedule can be distinguished clearly, and fear of misconception will be canceled.

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MEANS

[Means for Solving the Problem]
In the schedule-pipe ** system which proposes this design in order to attain the above-mentioned purpose, and controls operation of a facility device It is data display equipment which consists of a display unit, a display controller, and pointing equipment. It has the multi-window function which hierarchized the device schedule setting screen and the device operation information list screen according to device. The operation pattern code of each device is outputted to the operation pattern data display field for a fixed period established in the aforementioned device schedule setting screen. While reading the operation time data for a fixed period of the device chosen with the aforementioned pointing equipment from a database and displaying on the analog value display column according to each day on the aforementioned device operation information list screen by the bar graph The data display equipment which established the picture output means which carries out highlighting of the field in the aforementioned device schedule setting screen relevant to the selected device according to a color or a pattern is proposed.
[0006]
Moreover, the operation time data for a fixed period from the present day of the device chosen from the aforementioned device schedule setting screen with the aforementioned pointing equipment are read from a database. While displaying on the analog value display column according to each day on the aforementioned device operation information list screen by the bar graph, the data display equipment which established the picture output means which carries out highlighting of the applicable field of the present day on the aforementioned device operation information list screen according to a color or a pattern is proposed.
[0007]
Moreover, the digital-readout column prepares in the aforementioned device operation information list screen, and while carrying out the digital readout of the operation time data of the day applicable to the date of the analog value display column specified with the aforementioned pointing equipment to the aforementioned digital-readout column, the data-display equipment which established the picture output means which carries out highlighting of the field in the aforementioned device operation information list screen relevant to an applicable day according to a color or a pattern proposes.
[0008]
Moreover, interrupt the aforementioned device operation information list screen, and the schedule-number value display column is prepared. The interruption operation schedule set as the device chosen with the aforementioned pointing equipment It indicates by multiplex by the bar graph with the operation time data based on the aforementioned operation pattern code at the aforementioned analog value display column. The data display equipment which established the picture output means which carries out the digital readout of the interruption operation schedule data applicable to the date of the analog value display column specified with the aforementioned pointing equipment to the aforementioned interruption schedule-number value display column is proposed.
[0009]

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OPERATION

[Function]
A design according to claim 1 is displayed on a device schedule setting screen by the individual, each facility device, for example, the operation schedule for 1 week, operation pattern data display field in operation pattern code. If the device which wants to know a detailed operation schedule is specified with pointing equipment, a device operation information list screen will be established, and the operation schedule for 1 week of the device specified to be the analog value display column according to day is displayed by the bar graph, and can glance at them and grasp the contents of an operation pattern code. Highlighting of the related field of the specification device in a device schedule setting screen is simultaneously carried out by the different color or different pattern from the circumference.
[0010]
If a design according to claim 2 specifies the device which wants to know a detailed operation schedule with pointing equipment, the operation schedule for a fixed period, 1 [for example,], week will be displayed on the analog value display column of a device operation information list screen by the bar graph from that day, and highlighting of the field relevant to that day, for example, date column etc., of a device operation information list screen etc. will be carried out by the color or the pattern.
[0011]
The digital readout of the operation time data of the specified day is carried out to the digital-readout column, and a design according to claim 3 can recognize exact setting time, if the field of arbitrary days is specified with pointing equipment in the analog value display column according to day of a device operation information list screen. Simultaneously, highlighting of the related field of the day specified with the pointing equipment in a device operation information list screen is carried out by the different color or different pattern from the circumference.
[0012]
When the device displayed on the device operation information list screen is interrupted and the operation schedule is set up, a design according to claim 4 interrupts the analog value display column with the operation time data based on the aforementioned operation pattern code, and indicates the operation schedule by multiplex. And if the field of arbitrary days is specified with pointing equipment in the analog value display column, the digital readout of the interruption operation schedule of the specified day will be carried out to the interruption schedule-number value display column.
[0013]

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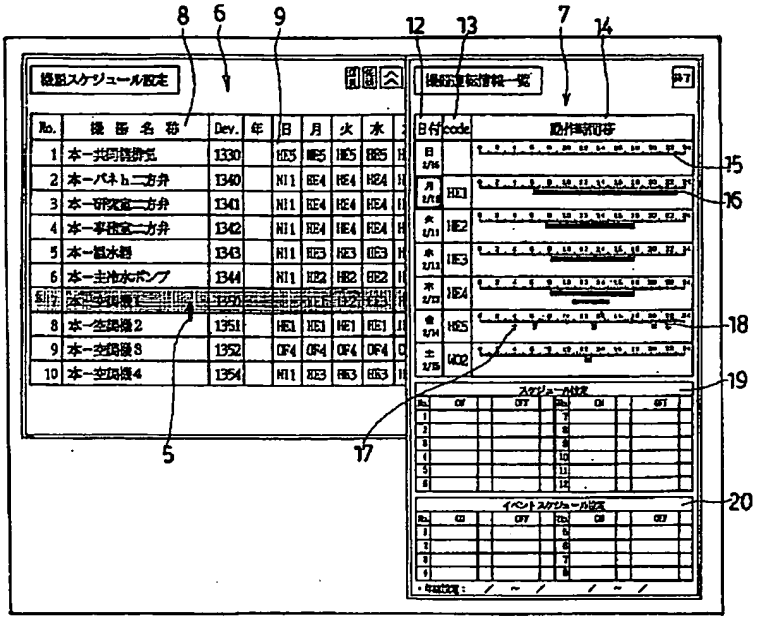
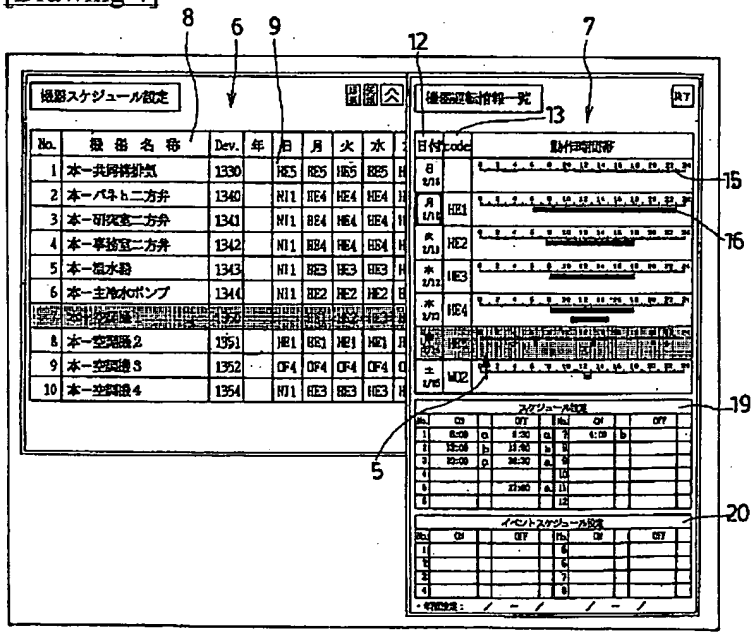
EXAMPLE

[Example]
Hereafter, one example of this design is explained according to drawing. Drawing 1 shows the composition of the data display equipment 1 of the centralized control system of a building, and is constituted by the mouse 4 as a display 2, a display controller 3, and pointing equipment, and the cursor 5 interlocked with a mouse 4 is displayed on the screen of a display 2.
[0014]
A display controller 3 carries out parallel processing of the picture output program read from external storage (not shown), and has the multi-window function which controls two or more virtual display terminals, and is simultaneously displayed on a display.
As a picture output program of a schedule data, the device schedule setting screen 6 which is shown in drawing 2 and which is an equipment list, and the device operation information list screen 7 which displays the individual detailed schedule shown in drawing 3 are set up.
[0015]
The cursor 5 interlocked with a mouse 4 and a mouse 4 is operated, and it is a menu (not shown). Selection of a shell device schedule setting screen displays the device schedule setting screen 6 shown in a display 2 at drawing 2 . The name of various devices is displayed on the schedule operation equipment-list viewing area 8 of the device schedule setting screen 6, and the operation pattern code of HE1 and HE2 grade which consists of three characters is displayed on the operation pattern data display field 9 by one week, respectively. It is displayed on the operation situation display field 10 contiguous to the operation pattern data display field 9 whether it is on stream and whether according to the set-up schedule, it is [be / it] under halt.
[0016]
If the pick of the arbitrary things in the information-requirements button 12 of the detailed information demand input area 11 currently displayed on the right-hand side of the schedule operation equipment-list viewing area 8 is carried out with cursor 5 to know the operation schedule of the specific device in the schedule operation equipment-list viewing area 8, the device operation information list screen 7 will be established. When cursor 5 is moved to the information-requirements button 12 of the train of No.7 in an equipment list and mouse button 4a is clicked, for example, by the picture output means As shown in drawing 3 , it is a part (here, from Monday on February 16 on February 10) for 1 week from that day. While the operation information on the air-conditioning machine of No.7 by Sunday is read from a database, is changed into graph data and displayed on the device operation information list screen 7 as a bar graph, a coloring indication of the line to which it corresponds in the device schedule setting screen 6 is given at a different color from other lines.
[0017]
The device operation information list screen 7 is constituted so that the operating-time band for 1 week may be displayed, and the date display column 12, the operation pattern display column 13, and the analog value display column 14 are formed by 1 week, respectively. The time scales 15 and 15 for 24 hour and -- are displayed on the analog value display columns 14 and 14 and --, respectively, and along



[Drawing 4]



[Translation done.]

Japanese Utility Model Laid-open
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審査請求　未請求　請求項の数４(全　４　頁)

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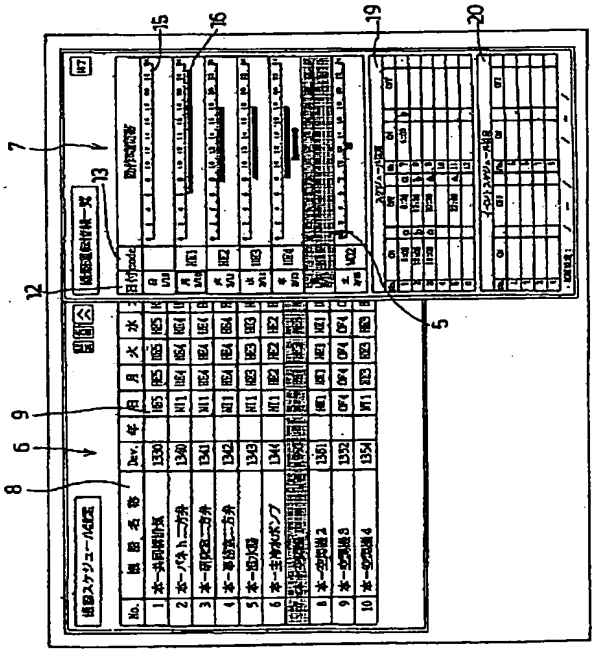
(54)【考案の名称】　スケジュール管理システムに於けるデータ表示装置

(57)【要約】
【目的】　機器の運転を管理するスケジュール管理システムにおいて運転スケジュールの視認性の向上を図る。
【構成】　データ表示装置の表示制御装置に、機器スケジュール設定画面６と機器別の機器運転情報一覧画面７とを階層化したマルチウィンドウ機能を与える。機器スケジュール設定画面６にカーソル５を移動して機器を指定すると、機器運転情報一覧画面７が表示され、機器スケジュール設定画面６の該当領域は着色される。機器運転情報一覧画面７のアナログ値表示欄１４，１４…には、指定した機器の当日から一定期間の運転スケジュールがグラフ表示される。カーソル５をアナログ値表示欄１４に移動すると、カーソル５が進入した日付の関連領域が着色され、その日付の運転時刻データが数値表示領域１９にディジタル表示される。



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【実用新案登録請求の範囲】

【請求項１】　設備機器の運転を制御するスケジュール管理システムにおいて、ディスプレイ装置と表示制御装置とポインティング装置とから構成されるデータ表示装置であって、機器スケジュール設定画面と機器別の機器運転情報一覧画面とを階層化したマルチウィンドウ機能を有し、前記機器スケジュール設定画面に設けた一定期間分の運転パターンデータ表示領域に各機器の運転パターンコードを出力し、前記ポインティング装置によって選択した機器の一定期間分の運転時刻データをデータベースから読み出して、前記機器運転情報一覧画面上の各日別のアナログ値表示欄へ帯グラフによって表示するとともに、選択した機器に関連する前記機器スケジュール設定画面中の領域を色若しくは模様により強調表示する画像出力手段を設けたデータ表示装置。

【請求項２】　前記機器スケジュール設定画面から前記ポインティング装置によって選択した機器の、現在日から一定期間分の運転時刻データをデータベースから読み出して、前記機器運転情報一覧画面上の各日別のアナログ値表示欄に帯グラフによって表示するとともに、前記機器運転情報一覧画面上の現在日の該当領域を色若しくは模様により強調表示する画像出力手段を設けた請求項１記載のデータ表示装置。

【請求項３】　上記機器運転情報一覧画面に数値表示欄を設け、前記ポインティング装置によって指定したアナログ値表示欄の日付に該当する日の運転時刻データを、前記数値表示欄に数値表示するとともに、該当日に関連する前記機器運転情報一覧画面中の領域を色若しくは模様により強調表示する画像出力手段を設けた請求項１又は２記載のデータ表示装置。

【請求項４】　上記機器運転情報一覧画面に割込みスケジュール数値表示欄を設け、前記ポインティング装置によって選択した機器に設定されている割込み運転スケジュールを、前記アナログ値表示欄に前記運転パターンコード＊

2

＊による運転時刻データとともに帯グラフによって多重表示し、前記ポインティング装置によって指定したアナログ値表示欄の日付に該当する割込み運転スケジュールデータを、前記割込みスケジュール数値表示欄に数値表示する画像出力手段を設けた請求項３記載のデータ表示装置。

【図面の簡単な説明】

【図１】データ表示装置の構成図。

【図２】ディスプレイに表示した機器スケジュール設定画面を示す解説図。

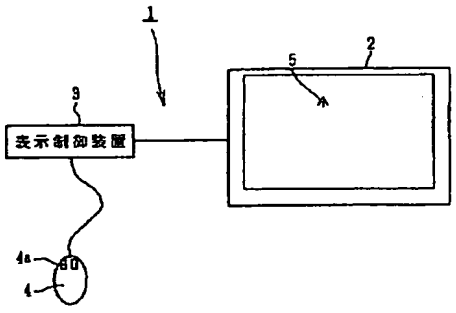
【図３】ディスプレイに表示した機器運転情報一覧画面を示す解説図。

【図４】数値表示欄に運転データを表示させた状態を示す解説図。

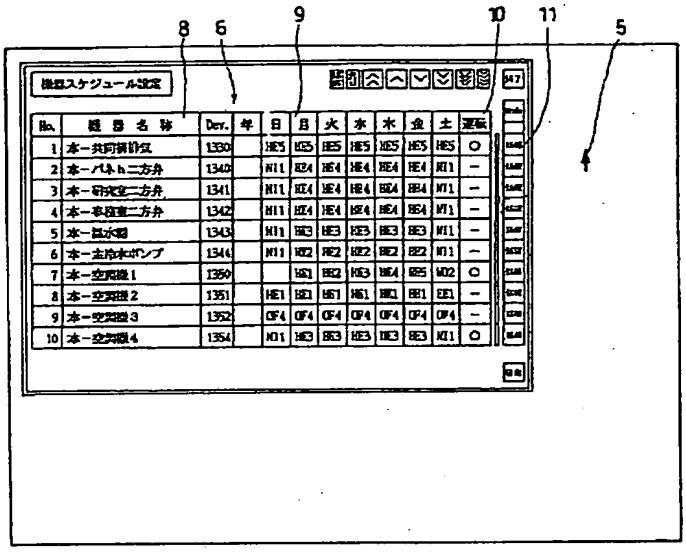
【符号の説明】

１	データ表示装置
２	ディスプレイ
３	表示制御装置
４	マウス
５	カーソル
６	機器スケジュール設定画面
７	機器運転情報一覧画面
８	スケジュール運転機器リスト表示領域
９	運転パターンデータ表示領域
１０	運転状況表示領域
１１	詳細情報要求入力領域
１２	日付表示欄
１３	運転パターン表示欄
１４	アナログ値表示欄
１５	時刻スケール
１６	棒グラフ
１７，１８	矢印マーク
１９	数値表示欄
２０	割込みスケジュール数値表示欄

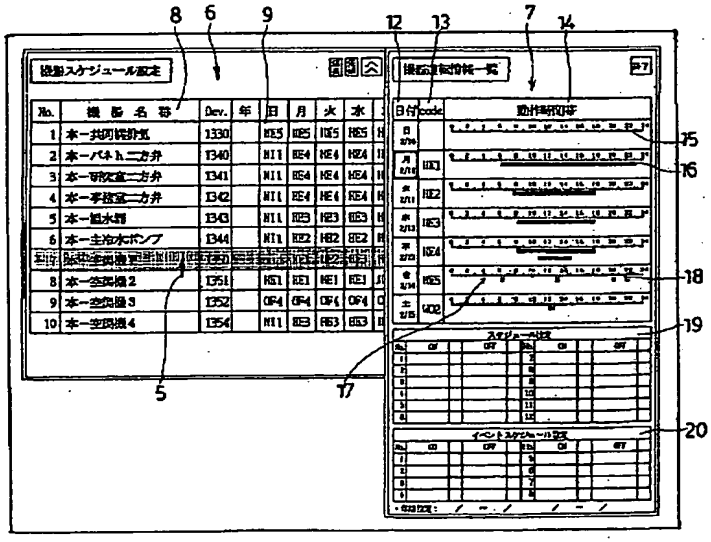
【図１】



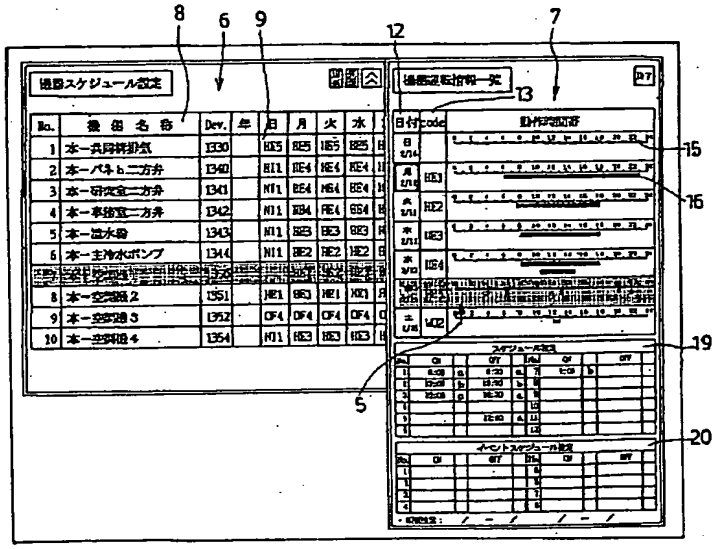
【図２】


8
6
9
10
11
5
機器スケジュール設定
No.
機器名称
Dev.
年
日
月
火
水
木
金
土
運転
1 本一共同排気 1330
2 本一バネｈ二方弁 1340
3 本一研究室二方弁 1341
4 本一事務室二方弁 1342
5 本一給水器 1343
6 本一主冷水ポンプ 1344
7 本一空調機1 1350
8 本一空調機2 1351
9 本一空調機3 1352
10 本一空調機4 1354

【図３】


8
6
9
12
13
7
14
15
16
18
19
20
17
5
機器スケジュール設定
No.
機器名称
Dev.
年
日
月
火
水
機器運転情報一覧
日付
code
動作時間帯
スケジュール設定
イベントスケジュール設定

【図４】



【考案の詳細な説明】

【０００１】

【産業上の利用分野】

この考案は、スケジュール管理システムに於けるデータ表示装置に関するものであり、特に運転スケジュール等のデータ表示装置に関するものである。

【０００２】

【従来の技術】

従来、ビルやプラント等の施設を集中管理する管理システムは、制御対象である設備機器の運転スケジュールや、収集した運転データをＣＲＴ等の表示装置に表示して監視できるように構成されている。設備機器の運転スケジュールリストや各設備機器毎の運転スケジュールの詳細等は夫々別ファイルとしてデータベースに格納されており、マウスやキーボード等の入力装置を操作することによって表示装置に表示させることができる。

【０００３】

【考案が解決しようとする課題】

従来、運転スケジュール等のデータを表示するときは、ファイル指定操作を行って表示装置に表示させている。従って、例えば設備機器の運転スケジュールリストを表示させて、リスト中の或機器のスケジュールの詳細を知りたい場合は、リストの表示を終了して新たに詳細スケジュール画面をデータベースから呼出さなければならず、操作が煩雑である。

【０００４】

また、一般にプログラム言語で記述された詳細スケジュールは、時刻の設定等を迅速に把握し難いという問題がある。

そこで、この考案は簡単な操作で運転スケジュールをより人間の感覚に適合する表示形態で表示するマンマシンインタフェースを提供し、データ表示装置の操作性及び視認性を向上することを目的とする。

【０００５】

【課題を解決するための手段】

この考案は、上記目的を達成するために提案するものであり、設備機器の運転

を制御するスケジュール管理システムにおいて、ディスプレイ装置と表示制御装置とポインティング装置とから構成されるデータ表示装置であって、機器スケジュール設定画面と機器別の機器運転情報一覧画面とを階層化したマルチウィンドウ機能を有し、前記機器スケジュール設定画面に設けた一定期間分の運転パターンデータ表示領域に各機器の運転パターンコードを出力し、前記ポインティング装置によって選択した機器の一定期間分の運転時刻データをデータベースから読み出して、前記機器運転情報一覧画面上の各日別のアナログ値表示欄に帯グラフによって表示するとともに、選択した機器に関連する前記機器スケジュール設定画面中の領域を色若しくは模様により強調表示する画像出力手段を設けたデータ表示装置を提案する。

【０００６】

また、前記機器スケジュール設定画面から前記ポインティング装置によって選択した機器の、現在日から一定期間分の運転時刻データをデータベースから読み出して、前記機器運転情報一覧画面上の各日別のアナログ値表示欄に帯グラフによって表示するとともに、前記機器運転情報一覧画面上の現在日の該当領域を色若しくは模様により強調表示する画像出力手段を設けたデータ表示装置を提案する。

【０００７】

また、前記機器運転情報一覧画面に数値表示欄を設け、前記ポインティング装置によって指定したアナログ値表示欄の日付に該当する日の運転時刻データを、前記数値表示欄に数値表示するとともに、該当日に関連する前記機器運転情報一覧画面中の領域を色若しくは模様により強調表示する画像出力手段を設けたデータ表示装置を提案する。

【０００８】

また、前記機器運転情報一覧画面に割込みスケジュール数値表示欄を設け、前記ポインティング装置によって選択した機器に設定されている割込み運転スケジュールを、前記アナログ値表示欄に前記運転パターンコードによる運転時刻データとともに帯グラフによって多重表示し、前記ポインティング装置によって指定したアナログ値表示欄の日付に該当する割込み運転スケジュールデータを、前記

割込みスケジュール数値表示欄に数値表示する画像出力手段を設けたデータ表示装置を提案するものである。

【０００９】

【作用】

請求項１記載の考案は、機器スケジュール設定画面に各設備機器の、例えば一週間分の運転スケジュールが個別の運転パターンデータ表示領域に運転パターンコードによって表示される。詳細な運転スケジュールを知りたい機器をポインティング装置によって指定すると機器運転情報一覧画面が開設され、日別のアナログ値表示欄に指定した機器の一週間分の運転スケジュールが帯グラフによって表示されて運転パターンコードの内容を一瞥して把握できる。同時に機器スケジュール設定画面中の指定機器の関連領域が周囲と異なる色又は模様で強調表示される。

【００１０】

請求項２記載の考案は、詳細な運転スケジュールを知りたい機器をポインティング装置によって指定すると、機器運転情報一覧画面のアナログ値表示欄に当日から一定期間、例えば一週間分の運転スケジュールが帯グラフによって表示され、機器運転情報一覧画面の当日に関連する領域、例えば日付欄等が色又は模様で強調表示される。

【００１１】

請求項３記載の考案は、機器運転情報一覧画面の日別のアナログ値表示欄の中で任意の日の領域をポインティング装置によって指定すると、指定された日の運転時刻データが数値表示欄に数値表示され、正確な設定時刻を認識することができる。同時に、機器運転情報一覧画面中のポインティング装置によって指定した日の関連領域が周囲と異なる色又は模様で強調表示される。

【００１２】

請求項４記載の考案は、機器運転情報一覧画面に表示した機器に割込み運転スケジュールが設定されている場合は、アナログ値表示欄に前記運転パターンコードによる運転時刻データとともに割込み運転スケジュールを多重表示する。そして、アナログ値表示欄の中で任意の日の領域をポインティング装置によって指定

すると、指定された日の割込み運転スケジュールが、割込みスケジュール数値表示欄に数値表示される。

【００１３】

【実施例】

以下、この考案の一実施例を図に従って説明する。図１はビルの集中管理システムのデータ表示装置１の構成を示し、ディスプレイ２、表示制御装置３及びポインティング装置としてのマウス４によって構成され、ディスプレイ２の画面上にはマウス４に連動するカーソル５が表示される。

【００１４】

表示制御装置３は、外部記憶装置（図示せず）から読込んだ画像出力プログラムを並列処理し、複数の仮想表示端末を制御してディスプレイ上に同時に表示するマルチウインドウ機能を有している。

スケジュールデータの画像出力プログラムとしては、図２に示す機器リストである機器スケジュール設定画面６と、図３に示す個別詳細スケジュールを表示する機器運転情報一覧画面７とが設定されている。

【００１５】

マウス４及びマウス４に連動するカーソル５を操作してメニュー（図示せず）から機器スケジュール設定画面を選択すると、ディスプレイ２に、図２に示す機器スケジュール設定画面６が表示される。機器スケジュール設定画面６のスケジュール運転機器リスト表示領域８には各種機器の名称が表示され、３文字からなるＨＥ１、ＨＥ２等の運転パターンコードが運転パターンデータ表示領域９に夫々一週間分表示される。運転パターンデータ表示領域９に隣接した運転状況表示領域１０には設定されたスケジュールに従って運転中か停止中かが表示される。

【００１６】

スケジュール運転機器リスト表示領域８中の特定の機器の運転スケジュールを知りたい場合は、スケジュール運転機器リスト表示領域８の右側に表示されている詳細情報要求入力領域１１の情報要求ボタン１２中の任意のものをカーソル５によってピックすると、機器運転情報一覧画面７が開設される。例えば、機器リスト中のNo. ７の列の情報要求ボタン１２にカーソル５を移動してマウスボタン

４ａをクリックすると、画像出力手段によって、図３に示すように当日から一週間分（ここでは２月１０日、月曜日から２月１６日、日曜日まで）のNo. ７の空調機の運転情報がデータベースから読み出されてグラフデータに変換され、機器運転情報一覧画面７に帯グラフとして表示されるとともに、機器スケジュール設定画面６中の該当する行が他の行と異なる色に着色表示される。

【００１７】

機器運転情報一覧画面７は、一週間分の動作時間帯を表示するように構成され、日付表示欄１２、運転パターン表示欄１３、アナログ値表示欄１４が夫々一週間分設けられている。アナログ値表示欄１４，１４，…には夫々２４時間分の時刻スケール１５，１５，…が表示され、時刻スケール１５，１５，…に沿って帯グラフ１６，１６，…が運転パターンをアナログ表示し、運転スケジュールを一瞥して把握できる。また、操作当日（２月１０日、月曜日）の日付表示欄１２の枠が強調表示されて画面上で当日の日付と曜日を認識できる。

【００１８】

また、オンのみ或いはオフのみが設定されている場合は、同図中金曜日の欄に示すように矢印マーク１７，１８が設定時刻の個所に表示される。

アナログ値表示欄１４，１４，…に表示された日の中で特定の日の運転データを更に詳細に知るには、カーソル５を任意のアナログ値表示欄１４に移動すると、図４に示すようにカーソル５が指し示す日の関連領域の色が変わると同時に、その日の数値データが下段の数値表示欄１９に、制御回路ａ，ｂ，…の種類情報とともに表示される。

【００１９】

また、当該機器に一時的な割込みスケジュールが設定されている場合は、アナログ値表示欄１４の木曜日の欄に示すように、その割込みスケジュールは定期スケジュール運転を示す帯グラフのやや下に帯グラフで多重表示されるとともに、カーソル５を木曜日の欄へ移動すれば、数値表示欄１９の下の割込みスケジュール数値表示欄２０に割込みスケジュールが数値表示される。

【００２０】

【考案の効果】

請求項１記載の考案は、機器スケジュール設定画面中の任意の機器をポインティング装置によって選択することにより、機器運転情報一覧画面が開設され、指定した機器の運転スケジュールが時刻スケールに対応した帯グラフや記号でアナログ表示されるので、スケジュールの設定状態を一瞥して把握できる。また、機器スケジュール設定画面中の該当機器の関連領域が色又は模様によって強調表示されるので、機器運転情報一覧画面に表示された運転スケジュールと該当機器の関連が一瞥して分かり視認性が良い。

【００２１】

請求項２記載の考案は、機器スケジュール設定画面中で指定した機器の現在日から一定期間の運転スケジュールが機器運転情報一覧画面にアナログ表示され、当日の日付欄等が強調表示されるので日付と運転スケジュールとの関連が一瞥して分かる。

請求項３記載の考案は、機器運転情報一覧画面にアナログ表示された運転データをカーソルによって指示することにより、運転のオン／オフの時刻データが数値表示されるので、極めて簡単な操作にてスケジュールの詳細を知ることができる。また、機器運転情報一覧画面中の該当日の関連領域が色又は模様によって強調表示されるので、数値表示欄に表示された運転スケジュールと該当日の関連が一瞥して分かり、視認性が良好であり、データ表示装置の操作性及び視認性が著しく向上する。

【００２２】

請求項４記載の考案は、機器運転情報一覧画面に表示した機器に設定された割込み運転スケジュールは、アナログ値表示欄に前記運転パターンコードによる運転時刻データとともに多重表示される。そして、アナログ値表示欄の中で任意の日の領域をポインティング装置によって指定すると、指定された日に設定された割込み運転スケジュールが、割込みスケジュール数値表示欄に数値表示され、運転パターンコードによる既存の運転時刻データと一時的な割込み運転スケジュールとを明確に判別することができ、誤認の虞れが解消される。